

Work Order ID 85139

85139

Page 1

June-04-12 1:26:04 PM

Item ID: D350-636-011

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Skidtube LH

Stop

NS2

Start Date: 04/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/06/04

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2750	F								
D3492	C								

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-011 CHG 006

DAS 16
12/06/04
JB

MLJ 12-7-24

B85139

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

110

0.00

110

Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

BE 12/06/25

BE 12/06/25

BE 12/06/28

BE 12/06/25

BE 12/06/28

BB 12/06/28

BE 12/06/28

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod batch: *M122130*

BE 12/06/26

12-Grind welds flush as per Dwg D2750

BE 12/06/26

120

QC10- Inspect visual per QSI004- ground welds

0.00

120

8/12/06/26

QC

Memo

0.00

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

130

8/12/06/26

QC

Memo

0.00

Quality Control

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Reference:

Approvals: Process Plan: _____ Date: _____

Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	QC7-Inspect Chemical Conversion Coat	0.00							
150									
QC	Memo	0.00							
Quality Control									

1 7/6 12-6-27

① SAD 12-07-03

W/O:		WORK ORDER CHANGES					
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Required Date: 18/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

0.00

160

Skidtubes

0.00

Skidtubes

Skidtubes

Memo

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D2750.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291

batch:

exp. date: 13-4-12

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 8)

A/R Aluminum Rod

batch:

11/22/30

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

38 12/07/03

> CF 12-7-3

> BE 12-07-04

DP 12-7-9

W/O:		WORK ORDER CHANGES					
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Start Date: 04/06/2012 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run Start *NR1*
	QC:	Date:	SPC (Y/N):	Date:	Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

12-Debur holes

170 QC10- Inspect visual per QSI004- ground welds 0.00

170

QC

Memo

Quality Control

180 QC5- Inspect part completeness to step on W/O 0.00

180

QC

Memo

Quality Control

Handwritten signature and date: 12-2-9

Handwritten signature: 8/26/10

Handwritten signature: 8/26/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Item Name: Skidtube LH

Stop ***NS2***

Start Date: 04/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours
190	Pressure Wash per QSI005 4.3	0.00
190		
HandFinish	Memo	0.00
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.	

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
---------	--------	--------------	---------------	---------------	------------------	----------------

1 NG 12-7-10

200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00
-----	--	------

200

Powdercoat

Powder Coating

Memo

START TIME: 10:30

OVEN TEMPERATURE: 320°F

FINISH TIME: 11:00

0.00

210	QC3- Inspect Part Finish	0.00
-----	--------------------------	------

210

QC

Quality Control

Memo

Inspect for foreign object per QSI 024

0.00

1X ϕ M-F 12/07/10

1.611 & JU 12/07/10

M121841

W/O:		WORK ORDER CHANGES					
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	QC:	Date:	SPC (Y/N):	Date:	Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00

220

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

✓ 1- Install inserts as per Dwg D2750

1 HFI - 4 - 11 12/07/14

230

0.00

230

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

✓ 1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: _____

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as

per dwg D2750

SIKA FLEX 241

BATCH: 1112113 6

EXP DATE: 11/03

✓ 4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: 11103-18

✓ 5-Coat all exposed fasteners with "LPS Procyon" batch: 11114 596

1 HFI - 4 - 11 12/07/14

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Required Date: 18/06/2012 Req'd Qty: 1.00

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

240 QC5- Inspect part completeness to step on W/O

0.00

240

QC

Memo

0.00

Quality Control

250 Pick Kit

0.00

250

Packaging

Memo

0.00

Packaging

260 QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.00

Quality Control

*****ensure antiseize is on AN8C21A bolts*****



17/9/26

(+)

12/07/24 JB

W/O:		WORK ORDER CHANGES					
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Required Date: 18/06/2012 **Req'd Qty:** 1.00 *** 1 ***

Reference:

Approvals: **Process Plan:** **Date:**

Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop *NR2*

Operation Description

Set Up/ Run Hours

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
---------	--------	-----------	------------	------------	---------------	-------------

270

0.00

270

Packaging

0.00

Packaging

Memo

Packaging

Package as per PPP D350-636-011

Rev I

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.00

Quality Control

me

12-07-27

W/O:		WORK ORDER CHANGES					
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Picklist Print

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Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:I 02.09.25 Rearranged procedure steps KJ
 IPP Rev:J 06-03-23 As per Rev D JLM
 IPP Rev:K 06-07.13 As per dsi9343 EC
 IPP Rev:L 07-07-28 Added SS Wearplates(Rev E) JLM Verf:EC
 IPP Rev:M 08-04-22 update steps 4, 13 DD verified by:EC
 IPP Rev:N 08-09-23 revF as per dwg DD verified by:ec
 IPP Rev:O 09-02-06 apply antiseize on AN8C21A bolts as per PAR09-010
 DD verf:EC IPP Rev:P 10.06.22 revise
 seq110 DD verf:EC IPP Rev:Q 10.10.01 as per IIN revH
 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3492-1		Manufactured	No			230	Each	257.0000	8	8			
D3492-1									**				
Plug													

Location	Loc Qty	Loc Code
FP002	242	
69531	8	
74444	2	
76235	4	
83259	228	
FP-A	15	
83098	15	

D3492-3		Manufactured	No			230	Each	167.0000	8	8			
D3492-3									**				
Plug													

Location	Loc Qty	Loc Code
FP-A	167	
81967	5	
83099	40	
83529	122	

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D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

188.0000

8

8

NAS1611-010

O-RING

**

yl 12/03/11

Location

Loc Qty

Loc Code

FP001

188

1122151

110915

14

vg

117460

8

118077

1

118612

3

119438

47

121259

2

121415

4

121584

59

121723

50

NAS1149D0863J

Purchased

No

250

Each

251.0000

2

2

NAS1149D0863.J

WASHER

**

JB 12/07/24

Location

Loc Qty

Loc Code

ST298

251

118078

34

119307

17

120308

100

120308

121556

100

D2744

Manufactured

No

110

Each

35.0000

1

1

D2744

Cap

**

BE 12/06/26

Location

Loc Qty

Loc Code

LG002

35

62715

1

78900

3

83412

31

June-04-12 1:26:12 PM

Shop Packet Print

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D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT

Manufactured No

110

Each

29.0000

1

1

D2600-3-BENT

Extrusion Bent

**

BE 12/06/25

Location

Loc Qty

Loc Code

LG

29

66875

7

73253

1

75021

1

75022

1

75023

1

81330

4

83305

1

83442

13

D2743

Manufactured No

160

Each

296.0000

8

8

D2743

Crossbolt Spacer

**

BE 12/06/25 07 04

Location

Loc Qty

Loc Code

LG

222

81965

55

83262

167

LG001

74

67766

4

68251

3

73403

64

74445

1

79517

2

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Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 4

Work Order ID: 85139

85139

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2739

Manufactured No

160 Each

13.0000

1

1

D2739

350 I Beam

**

①

CF 12-3

B85486

Location

Loc Qty

Loc Code

LG

13

72155

1

81508

1

83447

4

83448

5

83548

2

D3490-3

Manufactured No

160 Each

46.0000

4

4

D3490-3

Cross Bolt Spacer

**

B612/07/01

Location

Loc Qty

Loc Code

LG001

46

83313

46

4

D3490-1

Manufactured No

160 Each

45.0000

4

4

D3490-1

Cross Bolt Spacer

**

B612/07/08

Location

Loc Qty

Loc Code

LG

2

81976

2

LG001

43

62450

2

74875

4

77042

3

83269

34

4

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Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 5

Work Order ID: 85139

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85139

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

220

Each

781.0000

38

38

AI S4-1032-225

Insert

**

ul

12/07/11

Location

Loc Qty

Loc Code

ST281

758

7/1122290

x38

108696

146

110768

62

118386

55

118966

68

121269

427

ST282

23

120410

10

120451

13

D3793-3

Manufactured

No

230

Each

28.0000

1

1

D3793-3

Wearshoe

**

ul

12/07/11

Location

Loc Qty

Loc Code

FP001

28

83394

16

83901

12

x1

AN8C35A

Purchased

No

230

Each

68.0000

1

1

AN8C35A

BOLT

**

ul

12/05/11

Location

Loc Qty

Loc Code

FP002

67

115960

1

118286

16

121275

50

x1

ST346

1

114442

0

115188

0

115960

1

June-04-12 1:26:13 PM

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 6

Work Order ID: 85139

85139

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3793-1 Manufactured No

230 Each

28.0000

1 1

D3793-1

Wearshoe

**

21 12/07/11

Location

Loc Qty

Loc Code

FP001

28

82171

2

83393

13

83903

13

D3488-041 Manufactured No

230 Each

9.0000

1 1

D3488-041

Blade Fitting Assembly, LH

**

21 12/07/11

Location

Loc Qty

Loc Code

FP002

9

61689

1

82271

8

D3794-3 Manufactured No

230 Each

23.0000

1 1

D3794-3

Gasket

**

21 12/07/11

Location

Loc Qty

Loc Code

FP

21

83396

21

FP002

2

74530

2

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Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 85139

85139

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

86.0000

4

4

AN6C44A

BOLT

**

HL n/ozlc

Location

Loc Qty

Loc Code

FG

2

103964

2

ST343

84

121013

11

121167

13

121440

50

yd

121689

10

MS21083C8

Purchased

No

230

Each

81.0000

1

1

MS21083C8

NUT

**

HL n/ozlc

Location

Loc Qty

Loc Code

304

75

121185

29

121349

46

yl

FP002

1

115884

1

ST303

4

115884

0

118077

1

119309

2

119638

1

ST304

1

121524

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 8

Work Order ID: 85139

85139

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-25

Manufactured No

230

Each

28.0000

1

1

D3536-25

Gasket

HL 12/07/11

Location

Loc Qty

Loc Code

FP

28

83391

12

XL

83900

16

D3631-1

Manufactured No

230

Each

347.0000

8

8

D3631-1

Washer

HL 12/07/11

Location

Loc Qty

Loc Code

FG

332

81874

2

83588

330

XL

ST072

15

68062

2

75548

13

D3791-1

Manufactured No

230

Each

17.0000

1

1

D3791-1

Wearplate

HL 12/07/11

Location

Loc Qty

Loc Code

FP002

17

62239

2

83392

15

XL

AN960C10L

NAS1149C0332

Purchased

No

230

Each

0.0000

38

38

***AN960C10L ***

washer

M122063

(X3E) HL 12/07/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 9

Work Order ID: 85139

85139

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2745

Manufactured No

230

Each

122.0000

8

8

D2745

Bushing

**

u

12/07/11

Location

Loc Qty

Loc Code

FP

6

79518

6

FP001

116

69529

1

76142

1

83260

114

28

AN3C5A

Purchased

No

230

Each

1,302.000

34

34

AN3C5A

Bolt

**

u

12/07/11

Location

Loc Qty

Loc Code

FP001

7

115835

7

ST350

1295

116419

28

117343

13

117764

7

117872

2

119749

23

120423

28

121068

12

121255

500

121444

182

121708

500

234

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 10

Work Order ID: 85139

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85139

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3537-1 Manufactured No

230 Each 83.0000 3 3

D3537-1

Wearpad

**

u 11/07/11

Location

Loc Qty

Loc Code

FG

10

79833

10

FP002

73

69817

5

81360

14

81362

19

83254

1

83255

3

84091

31

B 83256

✓3

NAS1149C0832R

Purchased No

230 Each 257.0000 1 1

NAS1149C0832R

WASHER

**

u 11/07/11

Location

Loc Qty

Loc Code

ST297

257

114915

257

✓1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Picklist Print

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Work Order ID: 85139

85139

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

451.0000

4

4

AN3C6A

BOLT

**

u n/03/12

Location

Loc Qty

Loc Code

FP001

1

111982

1

ST351

450

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

13

119449

21

120423

3

120693

158

121682

200

x/

NAS1611-013

Purchased

No

230

Each

361.0000

8

8

NAS1611-013

O-RING

**

u n/03/12

Location

Loc Qty

Loc Code

FP001

361

116582

5

117291

2

117887

53

119623

36

121584

15

121825

200

121826

50

x/

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 12

Work Order ID: 85139

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85139

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-25

Manufactured No

230

Each

34.0000

1

1

D3535-25

Wearshoe

**

11/07/11

Location

Loc Qty

Loc Code

FP001

34

62233

1

81357

1

82156

2

83387

17

83899

13

XL

D3794-1

Manufactured No

230

Each

26.0000

1

1

D3794-1

Gasket

**

11/07/11

Location

Loc Qty

Loc Code

FP

6

82167

6

FP002

20

83395

20

Y1

MS21043-6

Purchased No

230

Each

618.0000

4

4

MS21043-6

NUT

**

11/07/10

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

598

117887

2

118384

96

120308

500

Y4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 13

Work Order ID: 85139

85139

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

127.0000

2

2

**

D3493-1

Washer

Location

Loc Qty

Loc Code

ST050

127

77573

1

82023

26

83097

100

83097

MS21083C8

Purchased

No

250

Each

81.0000

2

2

**

MS21083C8

NUT

Location

Loc Qty

Loc Code

304

75

121185

29

121349

46

FP002

1

115884

1

ST303

4

115884

0

118077

1

119309

2

119638

1

ST304

1

121524

1

AN8C21A

Purchased

No

250

Each

57.0000

2

2

**

AN8C21A

BOLT

Location

Loc Qty

Loc Code

ST343

57

118758

3

121167

4

121275

50

121275

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Page 13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 14

Work Order ID: 85139

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85139

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1515H3L

Purchased

No

230

Each

146.0000

4

4

***NAS1515H3I ***

WASHER

**

12/07/11

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

106

118686

3

119438

1

120360

11

121243

2

121556

89

24

D2741

Manufactured

No

250

Each

20.0000

1

1

D2741

Blade, 350 Skidtube

**

83135 JB

Location

Loc Qty

Loc Code

ST

-10

ST466

30

71856

1

79516

19

D3532-1

Manufactured

No

250

Each

7.0000

2

2

D3532-1

Spacer

**

83319 JB 12/07/24

Location

Loc Qty

Loc Code

ST053

7

82041

7

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Shop Packet Print

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
 - ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
 - POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
 - BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
 - MINIMUM YIELD TENSILE STRENGTH = 35 KSI
 - MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
- POWDER COATING WITH MEK DEGREASER
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 85139 MLJ

12/06/04

RELEASED

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.16		

DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DESIGN NO. REV. F
D2750 SHEET 1 OF 11
TITLE SCALE
350 SKIDTUBE ASSEMBLY NTS

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

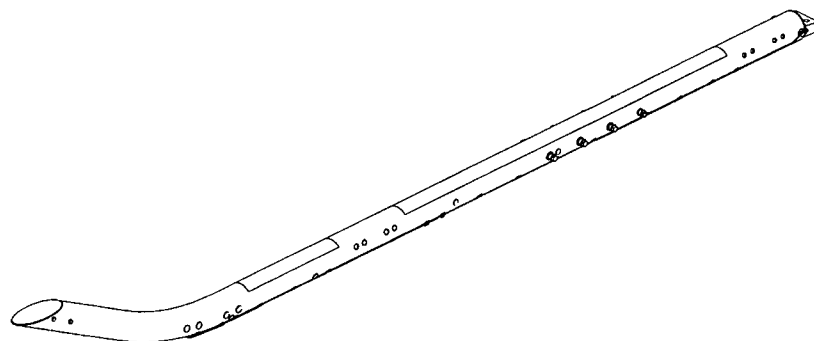
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

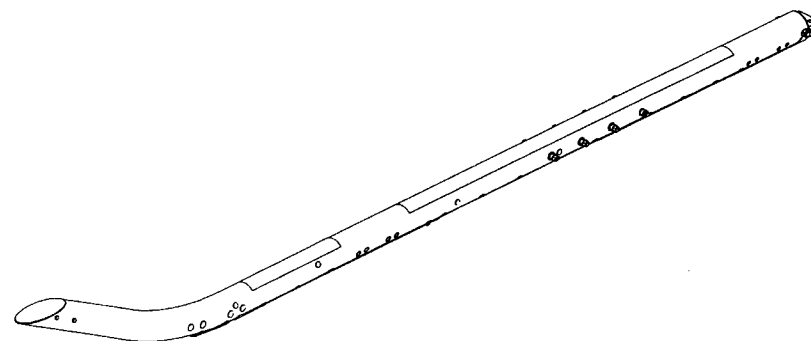
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

85139



D2750-041 350 SKIDTUBE ASSEMBLY, LH



D2750-042 350 SKIDTUBE ASSEMBLY, RH

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8/22/16

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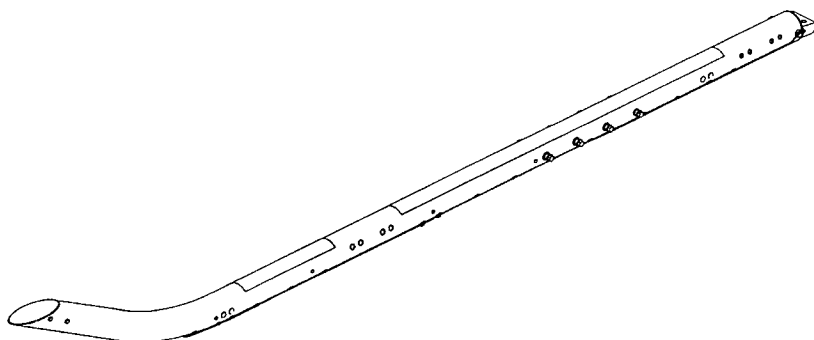
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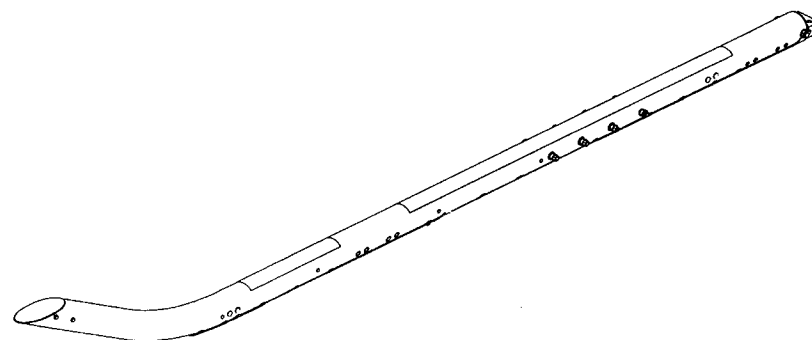
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

85739



D2750-043 350 SKIDTUBE ASSEMBLY, LH



D2750-044 350 SKIDTUBE ASSEMBLY, RH

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68-9-22/11

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DE APPR.	10	350 SKIDTUBE ASSEMBLY	NTS
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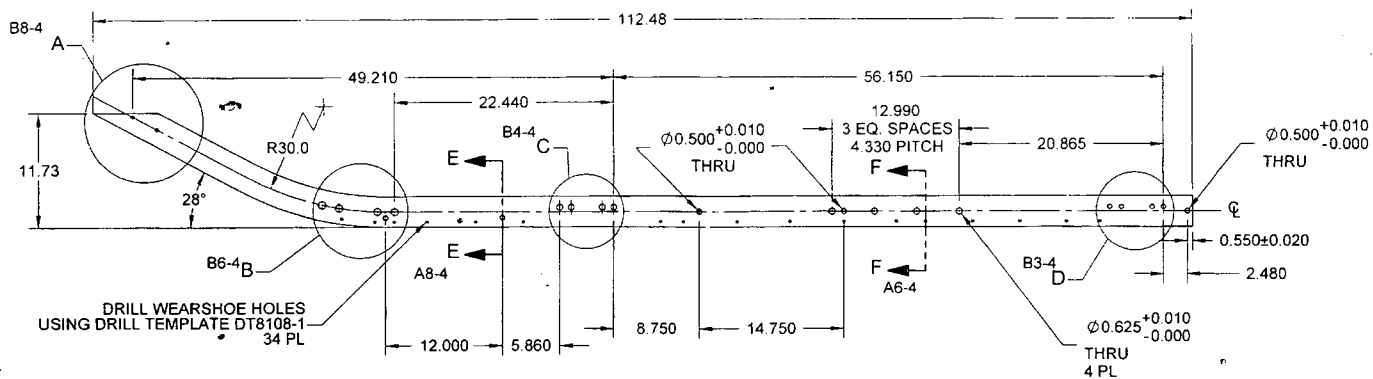
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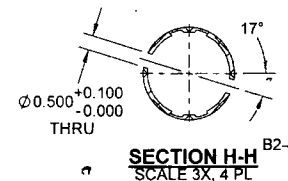
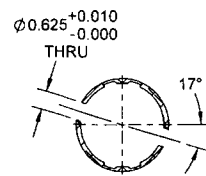
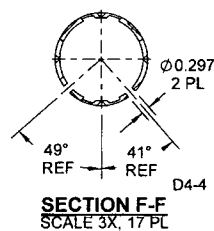
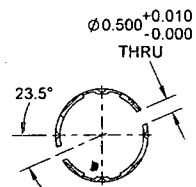
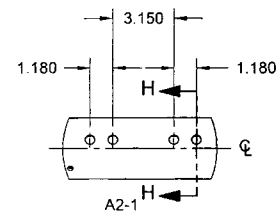
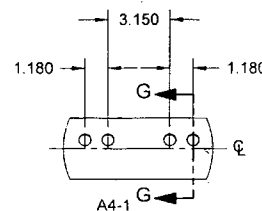
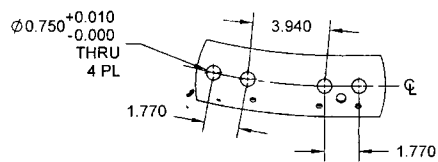
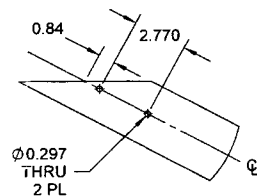
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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D2750-1 LH SKIDTUBE



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DRAWN	1/16
CHECKED	
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APPROVED	
DE APPR.	
DATE	08.07.16

DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWING NO. D2750	REV. F SHEET 4 OF 11
TITLE 350 SKIDTUBE ASSEMBLY	
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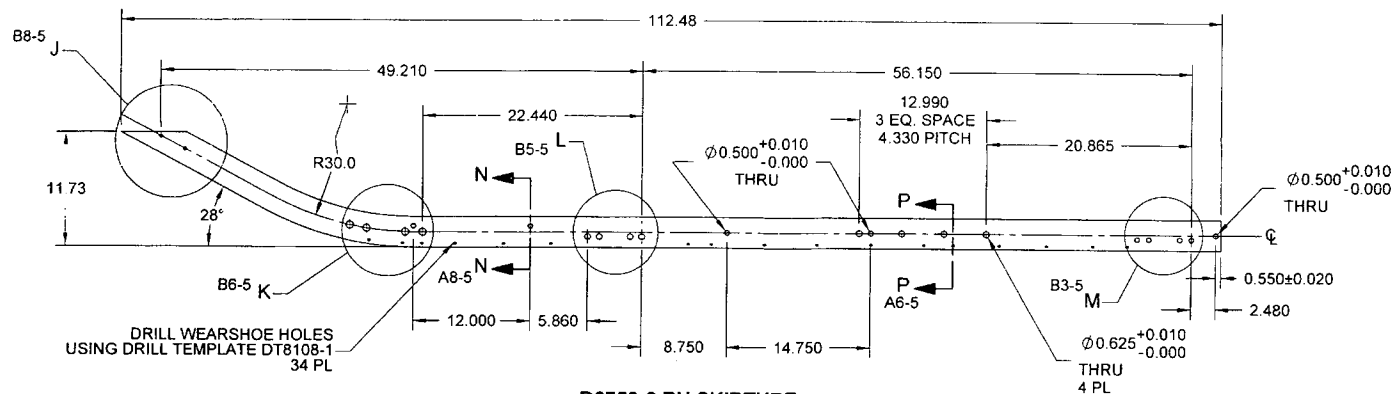
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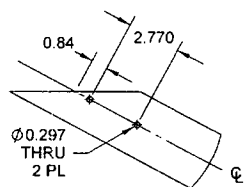
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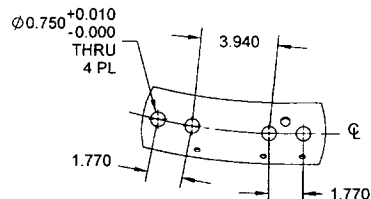
NOTE: Date & initial all entries



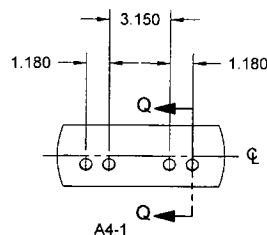
D2750-2 RH SKIDTUBE



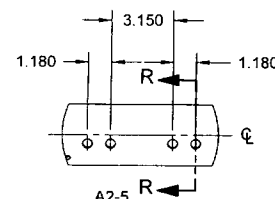
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SCALE 2X



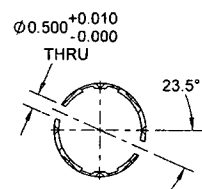
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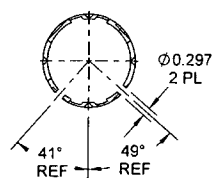
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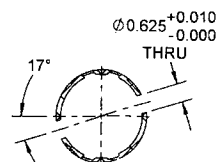
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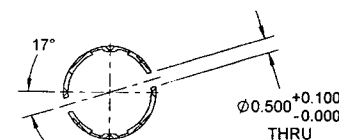
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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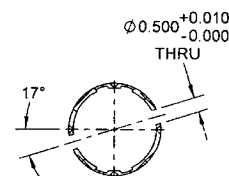
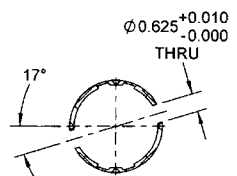
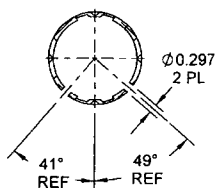
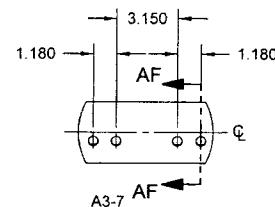
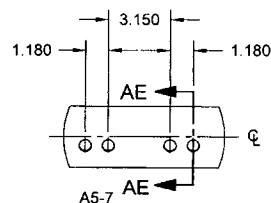
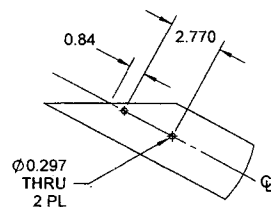
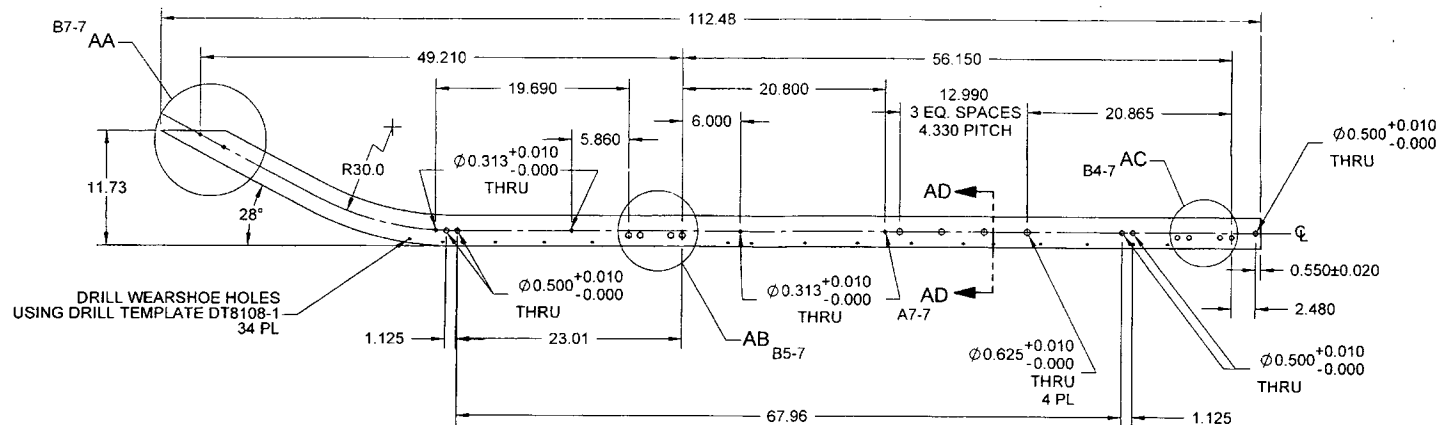
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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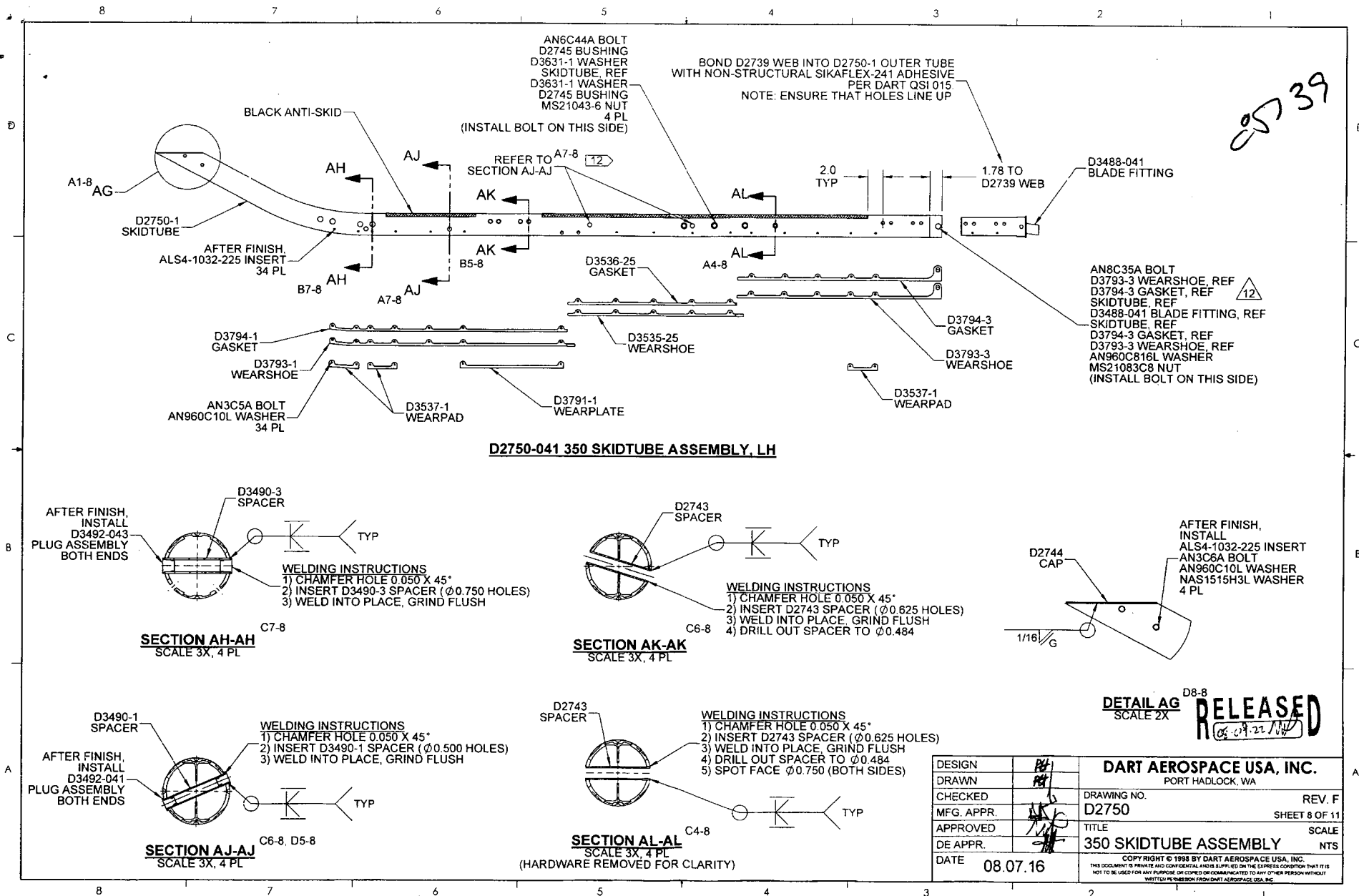
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NOTE: Date & initial all entries



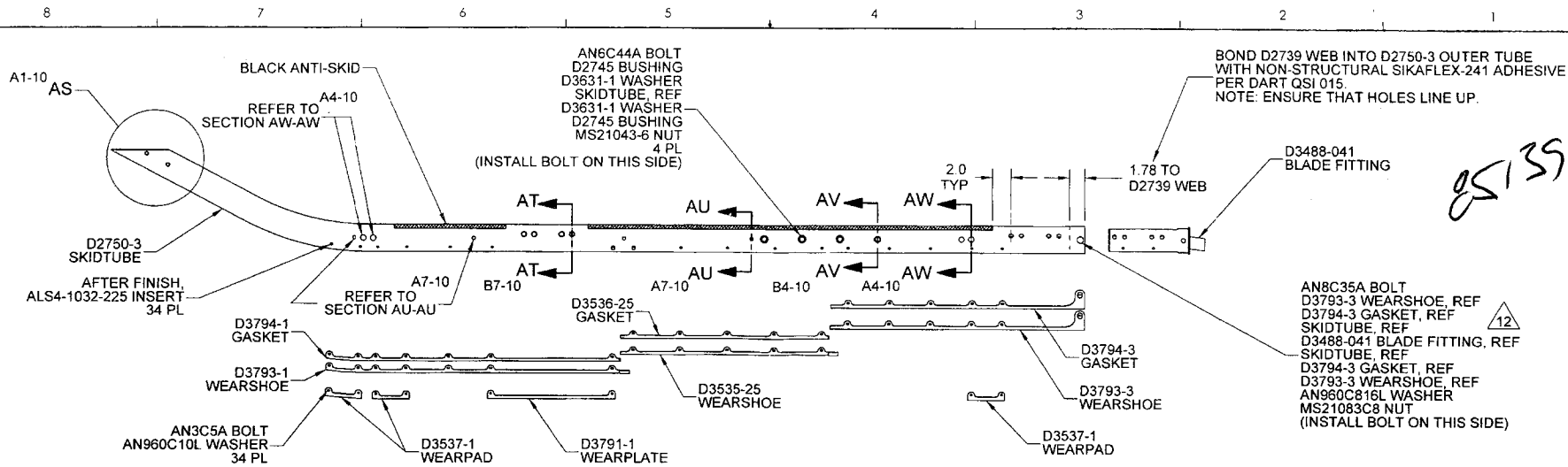
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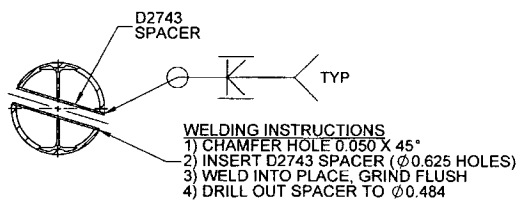
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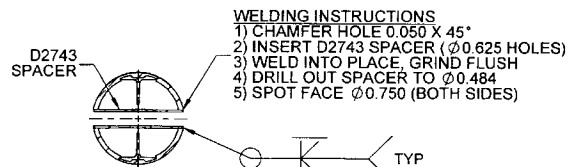
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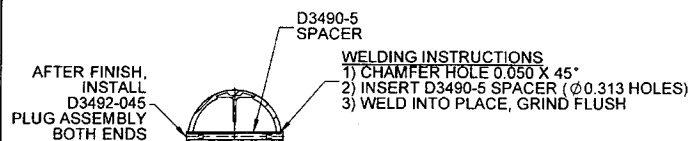
D2750-043 350 SKIDTUBE ASSEMBLY, LH



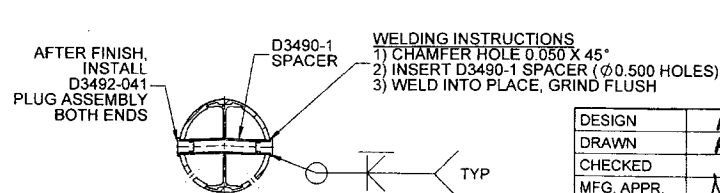
SECTION AT-AT SCALE 3X, 4 PL



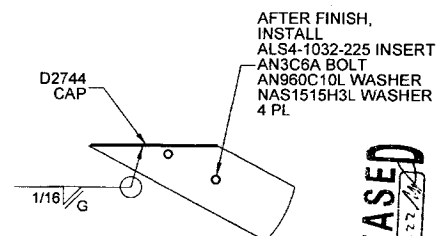
SECTION AV-AV SCALE 3X, 4 PL (HARDWARE REMOVED FOR CLARITY)



SECTION AU-AU SCALE 3X, 4 PL



SECTION AW-AW SCALE 3X, 4 PL



DETAIL AS SCALE 2X

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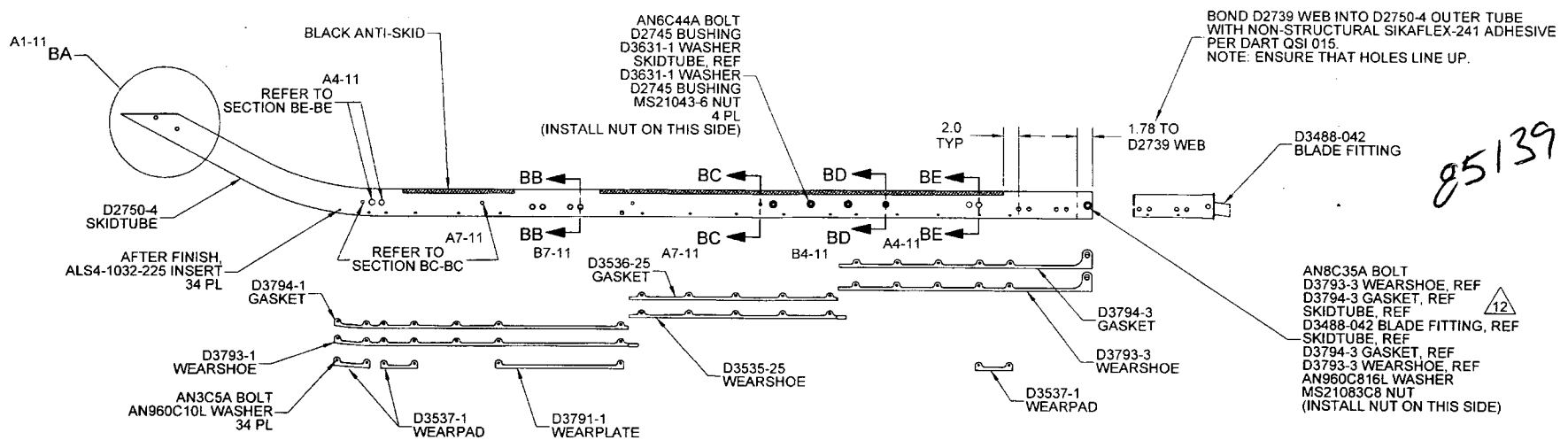
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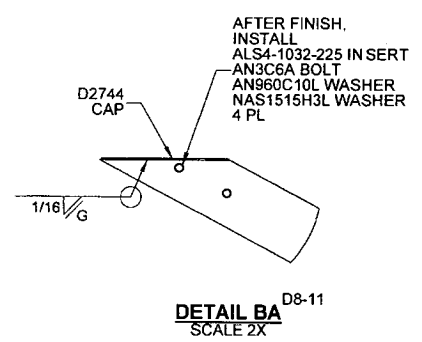
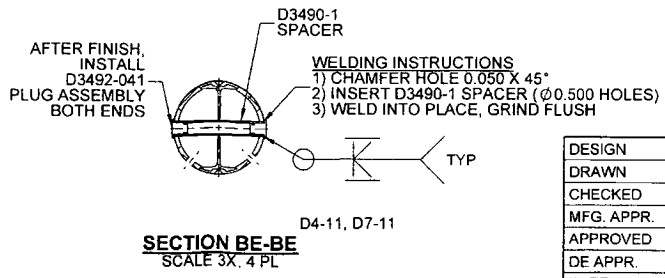
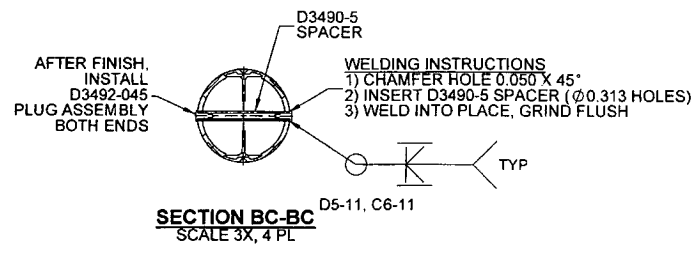
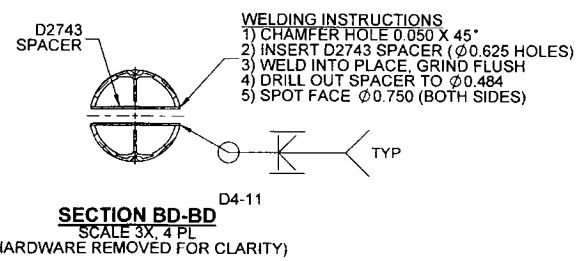
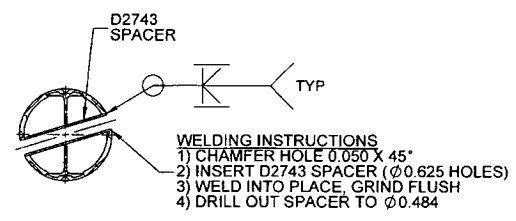
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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8 7 6 5 4 3 2 1



D2750-044 350 SKIDTUBE ASSEMBLY, RH



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NOTE: Date & initial all entries

NO. 294

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Berclay Elliott
Job number: 83800
Part number: A350-636-012
Description: Skid tube
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier David Anna Date of Test Coupon 12.05.09

Welder Berclay Elliott Date of Test Coupon 12.05.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld